

CLAIMS

1. An antioxidant against ROS (reactive oxygen species) induced by cyclosporin A or its analogues, comprising a cyclophilin protein with PPIase
5 (peptidyl-propyl-cis-trans isomerase) activity.

2. A pharmaceutical composition for preventing cyclosporin A-induced cytotoxicity by the overexpression of cyclophilin with PPIase activity in transplanted cells, comprising a recombinant expression vector which can
10 express the cyclophilin protein in such a sufficient amount as to reduce the toxicity induced by cyclosporin A or its analogues in transplanted cells.

3. The pharmaceutical composition as defined in claim 2, wherein the transplanted cells are myoblasts.

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4. A cell for use in the transplantation which is resistant to cyclosporin A or its analogues, wherein a cyclophilin protein with PPIase activity is over-expressed.

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5. The cell as defined in claim 4, wherein the cell is a myoblast.

6. A method of preparing cells for use in the transplantation which are resistant to cyclosporin A or its analogues, comprising the steps of introducing a gene encoding a cyclophilin protein with PPIase activity into a vector to
25 construct a recombinant expression vector, transfecting the recombinant expression vector into cells to be transplanted, culturing the transfected cells, and

selecting cells in which the cyclophilin with PPIase activity is over-expressed.

7. A method of preparing cells for use in the transplantation which are resistant to cyclosporin A or its analogues, comprising the steps of culturing cells
5 to be transplanted in the presence of cyclosporin A or its analogues and recovering viable cells from the cultures.

8. The method as defined in claim 6, wherein the cells are myoblasts.

10 9. The method as defined in claim 7, wherein the cells are myoblasts.